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ABSTRACT

Superport is a learning experience which requires students to examine how a superport and its related industries will affect the marine environment of a given geographical area. The activity is designed to provide roles for up to 90 students. The simulation begins with the students defining factors that might be related to the installation of a superport. Continued studies expose students to a wide range of information sources and activities. The lesson plan could be expanded to cover a period of several weeks or could be confined to one week. It is designed primarily for secondary school students in social studies. (RH)

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311

SIMULATION GAME: SUPERPORT

A Learning Experience for
Coastal and Oceanic
Awareness Studies

Produced by

MARINE ENVIRONMENT CURRICULUM STUDY
MARINE ADVISORY SERVICE
UNIVERSITY OF DELAWARE

and

POPULATION-ENVIRONMENT CURRICULUM STUDY
COLLEGE OF EDUCATION
UNIVERSITY OF DELAWARE

as part of a

PLAN FOR ENVIRONMENTAL EDUCATION

Fall 1974

SE 022 684

Please send evaluations

of learning experiences

to

Dr. Robert W. Stegner, Director

COAST Project

310 Willard Hall Education Building

University of Delaware

Newark, Delaware 19711

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POPULATION COUNCIL

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DEPARTMENT OF PUBLIC INSTRUCTION

DEL MOD SYSTEM

DUPONT EDUCATIONAL AID COMMITTEE

TITLE: SIMULATION GAME: SUPERPORT

*CONCEPT: V.D.1.

V. The activities of human populations may degrade the environment and restrict the quality of human life.

D. Human activities may degrade the esthetic quality of the environment.

1. ECONOMIC VALUES ARE OFTEN IN CONFLICT WITH ESTHETIC VALUES.

**MARINE CONCEPT: 4.12

4. Man is part of the marine ecosystem.

4.1 The marine environment has affected the course of history and the development of human cultures.

4.12 PROXIMITY TO THE OCEANS AND THE AVAILABILITY OF MARINE RESOURCES HAVE INFLUENCED THE CULTURES OF MANY SOCIETIES.

SUBJECT: Social Studies

GRADE LEVEL: 10-12

PERIODS: 12

AUTHOR: McFarland

* From A Conceptual Scheme for Population-Environment Studies, 1973. Cost $2.50.
** From Marine Environment Proposed Conceptual Scheme, 1973. No charge.
Both conceptual schemes are available from Robert W. Stegner, Population-Environment Curriculum Study, 310 Willard Hall, University of Delaware, Newark, DE 19711.

TEACHER'S GUIDE

SUPERPORT is a learning experience which requires students to examine how a superport and its related industries will affect the marine environment of a given geographical area. This activity is designed to provide roles for up to ninety students. The students are further divided into groups of thirty each with each group representing a county in the fictitious State of Outland. In this activity the student will become involved in a decision-making process that will make him aware of the various conflicts and pressures involved in reaching a decision of public importance. The game begins with the students defining factors that might be related to the installation of a superport. Continued studies will expose students to a wide range of information sources and activities.

As the activity proceeds, the student is assigned a hypothetical adult role in the State of Outland. This role forces the student to confront a crucial issue in his state. His involvement will require him to weigh such things as the environment, economics and political behavior. In the culminating activity the students will use their influence points to select public officials such as a governor, lieutenant governor and members of the legislative assembly. These public officials will in turn establish the policies regarding the superport.

The lesson plan could be expanded to cover a period of several weeks or perhaps confined to one week. Although it fits best in the Social Studies area of learning, it could easily be included in a biology course with biological implications emphasized. Fish and game experts might be included in the role playing to present pertinent biological information.

If the school lends itself to flexible situations, this might be a unit a social studies class and a biology class might work on together. It would also be suitable for a "mini-course". If your class is small, make sure that each county is well represented and that someone takes the role of governor, the mayors, a representative from Superport, Inc., as well as teachers, factory workers and ministers.

A SUGGESTED

SUPERPORT DAILY SCHEDULE

DAY	ACTIVITY	MATERIALS	POSSIBLE POINTS FOR EVALUATION
1	A. Introduction of game B. Teacher gives survey, explains game, and assigns roles (assign or draw roles)	A. Student survey B. Map C. Student Handbooks D. Vocabulary Words	A. 5 Points for completing Survey. Answers: A-- 3,4,5,6, 8, D-- 1,2,7,9,10 U-- 11-20
2	A. Students work on and discuss the Superport activity Handout B. First 16 vocabulary words due.	Superport Activity Handout	A. 5 Points for Handout B. 16 Points for Vocabulary
3	A. Guest Lecture (Science teacher)(Large group - 3 classes)	A. Attached guide for Science teacher p. 22	A. 5 Points for attending and taking notes (optional)
4.	A. Movie and follow-up discussion (large group- 3 classes) B. Second 16 vocabulary words due.	A. Movie-Crisis in Estuary, B. Movie Guide p. 32	A. 5 Points for completing Movie Guide B. 16 Points for vocabulary words.
5	A. Lecture (Social Studies teacher)(Large group - 3 classes	A. Attached guide for Social Studies teacher p.23	A. 5 Points for attending and taking notes(optional) p. 3
6	A. Students interact and form pressure groups based on roles in each classroom B. Third 16 vocabulary words due.	A. Students bring descriptive roles to class	A. 16 Points for vocabulary

V.D.I (Mar. 4.12)

DAY	ACTIVITY	MATERIALS	POSSIBLE POINTS FOR EVALUATION
7	A. Filmstrip and follow up discussion(large group-3 classes) B. Last list of vocabulary words due C. Students interested in being candidates for upcoming elections. Start getting petitions signed.	A. Man's Natural Environment: Crisis Through Abuse. Part I available at Concord High School's Social Studies Resource Center or Guidance Assoc. of Pleasantville, N.Y. B. Filmstrip Guide	A. 5 Points for completing films and guide B. 15 Points for vocabulary
8	A. Vocabulary test - Identify 25 words B. Special projects from student handout (Ex.-special projects-critique, etc.) These are the only points that can be used on student profile IP's. Minimum of one project due and failure to do so means a loss of 10 IP's.	A. 25 vocabulary words	A. 25 Points for vocabulary words B. 15 Points for each project No maximum number of projects C. Special project points may be applied to profile IP's D. Failure to do a project means a loss of 10 IP's on your profile.
9.	A. Legislative Assembly calls a public hearing. B. Any concerned citizen may express himself (Superport representatives, governor, other teachers, etc. C. Lt. governor chairs meeting D. Political campaigning should take place before and after the hearing(large group-3 classes)	A. Large room with members of the Assembly sitting in front B. Podium for guest speakers	A. 5 Points for attending the meeting (optional)

V.D.I. (Mar. 4.12) p. 4

DAY	ACTIVITY	MATERIALS	POSSIBLE POINTS FOR EVALUATION
10	A. Classroom activity-political speeches at local level B. Statewide candidates should move from classroom to classroom making speeches	A. Readings from Day 1 B. Student made campaign buttons and posters (optional)	
11	A. Election petition due B. Election of Gov., Lt. Gov. and Leg. Assembly	A. Ballots B. Tally sheet	A. 10 Points if elected to office.
12	A. Legislative Assembly is called into session to make a decision on changing the coastal zoning law to permit a Superport (majority vote) B. Governor signs or vetoes the bill if passed. C. If vetoed, the legislative assembly can override by a 2/3 vote. D. Student survey	A. Large room arranged for Legislative Assembly Meeting B. Student survey (same as given on Day 1)	A. 5 Points for survey B. If Superport is permitted, the representatives of Superport, Inc. receive 10 Points.

SUPERPORT STUDENT SURVEY

Use the following symbols for your answers:

A = Agree
U = Undecided
D = Disagree

_____1. When you hear Santa Barbara, your first throught should be air pollution.

_____2. The Torrey Canyon is an area located east of Cape Henlopen.

_____3. An estuary is a semi-enclosed coastal body of water which has a free connection with the open sea and within which sea water is measurably diluted with fresh water from land drainage.

_____4. A monobouy is a type of deepwater port.

_____5. DWT refers to the tons of cargo a ship is capable of carrying.

_____6. Most of the major ports in the U.S. today can handle ships having up to 40 foot drafts.

_____7. Industrial corporations are chiefly responsible for the polluted waters of the Delaware River and Bay.

_____8. A ship's draft is the depth of its keel.

_____9. The EPA is a private agency concerned about economic protection of the oil industry.

____10. Nuclear power plants are considered very dangerous to mankind because of thermal pollution.

____11. Opposition to superports has been started primarily by liberals who would like to change the capitalistic system.

____12. With increasing population and technology, man must be willing to sacrifice his clean waters.

____13. The oil industry is unjustly criticized by environmentalists.

____14. The national government should subsidize industry to help keep our environment clean.

____15. A violator of environmental laws should be subject to heavy fines and imprisonment.

____16. Joe Citizen is willing to pay to help keep the environment clean.

____17. Many of the social ills of today are a result of poor environmental laws.

____18. Current advertising of the energy crisis is a political tactic of the oil industry to persuade the public to accept a superport.

____19. People should not have to take a periodic cruise in order to see clean water or smell fresh air.

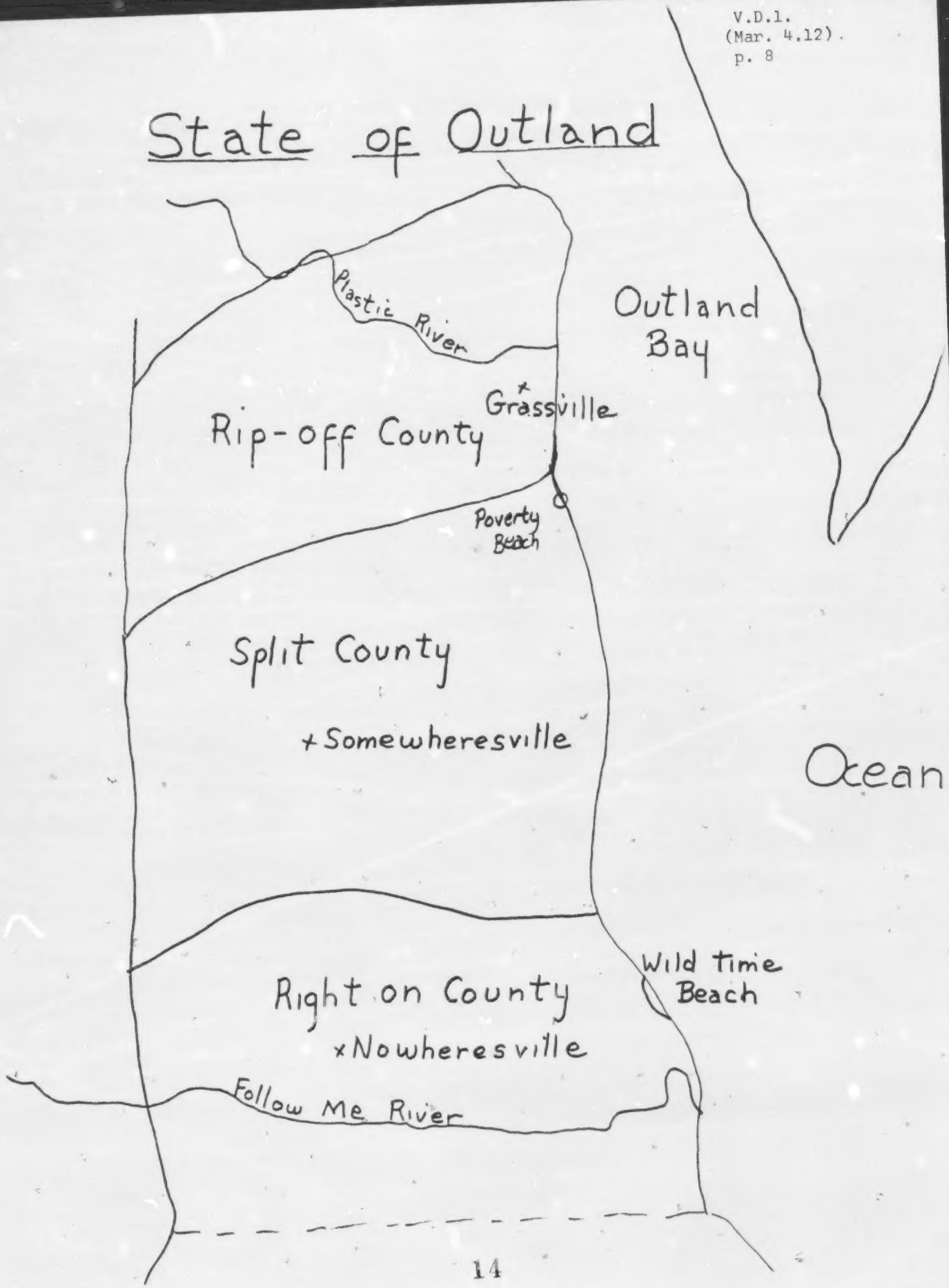
____20. If man would give up his automobile, an energy crisis would not exist today.

VOCABULARY LIST

Wetlands
Draft
Channel
Supertanker
Superport
Tides
Marine ecology
Man-generated pollutant
Natural pollutant
Water Pollution
Thermal pollution
Oil depletion
Dredge
Megalopolis
Marsh
Torrey Canyon
Petroleum
Corps of Engineers
Santa Barbara
Algae
Plankton
Shellfish
Eutrophication
Estuaries
Pesticides
Tank farm
Oysters
Piedmont crystallines
Pleistocene sand and gravel
Hydrology
Oceanography
Continental Shelf
Finfish
Sport fishing
Dissolved oxygen
Synthetic detergents
Sewage sludge
Biochemical oxygen demand
Chlorides
Alkalinity
Organic nitrogen
Phosphates
Marsh ecosystems
Marine terminal
Tonnage
Off-land cargoes
Tugboat
Barge
Dead weight tonnage (DWT)
Deepwater port
Monobuoy
Bulk-transfer terminals
Residual fuel oil
Crude oil
Long ton
Short ton
Domestic-coastwise receipts
Domestic-coastwise shipments
Domestic-internal receipts
Domestic-internal shipments
Domestic-local
Groundwater
Erosion

What do these terms mean to you?

Can you spell them correctly?


State of Outland
Plastic River
Outland Bay
Grassville
Rip-off County
Poverty Beach
Split County
+Somewheresville
Ocean
Wild time Beach
Right on County
×Nowheresville
Follow Me River

Student Handbook
SUPERPORT

OVERVIEW

SUPERPORT, a simulation activity, encourages you to study certain problems and possible solutions related to marine ecology. You will assume the role of an adult citizen in a hypothetical state, Outland. You will be given opportunities to take part in decision-making at the state level of government by forming an opinion and expressing your views on a proposal to locate a superport in the state. Some in the class will be seeking election to the executive and legislative branches of government while the others will be asked to support the candidate of their choice.

You may be assigned a role that conflicts with your own personal opinions. However, in a simulation activity, it is essential that you express the view representative of the role assigned to you.

Throughout the simulation activity you will be expected to investigate various types of pollution and their effects on the marine environment. Your studies will include a brief analysis of statements made as a result of a marine ecology study, the preparation of position papers, and the completion of action projects.

Each role is assigned a certain number of Influence Points (IP's) depending on the individual's economic and social status. Since in real life individuals may gain influence by becoming knowledgeable on certain issues, you may gain additional IP's by satisfactorily completing the analysis of the marine ecology survey statements, preparation of position papers, and completion of action projects. (Certain simulated events will result in participants gaining or losing IP's.)

SITUATION

Outland, with a population of 600,000, is located along the Eastern seaboard in the heart of the northeast megalopolis. The state specializes in tourism, research, and a few heavy industries. The franchise laws of Outland encourage large businesses to incorporate in the state, thus making the state relatively affluent. As a result, the state unemployment is relatively low as compared with other states.

Outland is located on a major rail line, on a major interstate highway, and on a large navigable bay which meets the ocean in the southern part of the state. Because of its location, the state is a haven for fishing, surfing and beach enthusiasts.

Recently the state passed a coastal zoning law, restricting additional heavy industry along its shoreline. However, with a national fuel shortage developing and the use of larger super-tankers, a lot of money is being spent and a lot of pressure is being applied in the upcoming gubernatorial and legislative elections. With a newly elected government, the possibility of changing the law and permitting a superport exists.

Because of its proximity to large population centers of the Northeast , the availability of land, a good highway system, and a high per capita income of state residents, Outland has experienced a phenomenal growth in the use of its marine environment during the past ten years.

Not all of the residents of the lower two counties are convinced that this growth is desirable.

THE OIL INDUSTRY

During the past several months, representatives of the Oil Industry have been pressuring the state and national governments to consider the need for superports. Public hearings have been held by the federal government in various towns throughout the northeast corridor to help determine the most feasible superport site.

Outland Bay appears to be the location preferred by members of the Oil Industry, who argue that by using Poverty Beach, they will be able to meet the demand for oil plus reduce tanker traffic. The Oil Industry also claims that tanker petroleum load transfer is already taking place in the Bay because the draft of many tankers is too deep to navigate the channel to Oldport (in the neighboring state). Representatives of the Oil Industry argue that taxes will be lowered, schools upgraded, resort areas enriched and fishing improved if the port is located at Poverty Beach.

STATE LEGISLATIVE AND EXECUTIVE PROCEDURES

The Outland Legislative Assembly is responsible for passing laws which will dictate the future of the state. The Assembly is a bicameral body composed of a fifteen-member House of Representatives and a nine-member Senate. Members of each house have one vote. In order for legislation to pass, it must receive a majority vote in each house and be signed by the governor. A 2/3 vote of both houses is required to override a veto. The House of Representatives selects its own speaker (presiding officer) by majority vote. The Senate is presided over by the lieutenant governor who is a non-voting member of this body.

In SUPERPORT, the Legislative Assembly conducts a public hearing to obtain the citizens' views regarding the construction of a superport. Eventually the assembly will have to decide whether or not to change the coastal zoning law,

Each member of the Assembly is free to ask questions of those presenting their views. Each member should be able to express his views during the public hearing, during the election campaign, and just prior to the voting of the Assembly on changing the law.

The representative of Superport, Inc. should be the first speaker at the hearing. He should present a proposal to change the law to permit his firm to locate the superport at Poverty Beach. The speech should include tentative plans as well as advantages and disadvantages of this location. Other speakers should include the Governor, assembly members, pressure group representatives and citizens.

GUBERNATORIAL AND LEGISLATIVE ASSEMBLY ELECTION INSTRUCTIONS

In SUPERPORT, any citizen of Outland is eligible to seek election. All students are eligible to circulate nominating petitions for the offices of governor, senator, or representative. Each of the three classes (counties) will have five representatives and three senators. The governor and lieutenant governor will be elected at large. To be nominated, a candidate for governor or lieutenant governor must gain the support of individuals with a combined total of 400 Influence Points. A candidate for the Legislative Assembly must gain the support of individuals with a combined total of 225 IP's. Residents of each county may only sign the petitions of candidates for the legislative assembly from their own county. Howver, residents of all three counties may sign petitions for governor and lieutenant governor.

Those interested in public office seek the support of those who are most likely to agree with them. Citizens generally back the candidates who are most likely to carry out their ideas. It is not a good idea to sign a petition unless you are sure of the candidate's positions on public issues. When running for governor or lieutenant governor it is a good idea to gain support from all three counties.

When circulating nominating petitions, either the prospective candidate or a campaign manager may obtain the signatures of supporters. After the petitions have been completed a ballot will be prepared to assure a secret election. In real life each citizen possesses one vote. In Outland however, each citizen has as many votes as he has influence points. The influence points reflect the number of persons' opinions and decisions that the individual may affect in resolving social questions.

LIVE YOUR ROLE!

RIP-OFF COUNTY ROLES

Doctor 35 yrs. old

Resident of Grassville for 5 years
Father of 2 sons. His wife spends the summer months at the beach near Wild Time with her 2 sons. A member of the House of Representatives for 2 yrs.
25 IP's

Grocery Store Manager 40 yrs. old

Lifetime resident of Rip-Off County
A confirmed bachelor. He owns 2 high-powered sports cars which he races each weekend at Little Ghostville Raceway in Right-on County. A member of the House of Representatives for 10 yrs.
20 IP's

Pharmacist 24 yrs. old
Resident of suburban Grassville for 2 yrs. His new bride is employed as a secretary for a local oil refinery.
20 IP's

Mayor of Grassville 30 yrs. old
Lifetime resident of the city. He was elected 2 years ago. His campaign was run on his being a friend of labor. He enjoys fishing whenever time permits.
25 IP's

Gas Station Owner 45 yrs. old
Lifetime resident of Rip-Off County. He is an independent owner whose business has been declining. The increasing price of gas has made it difficult for him to compete with the "major" company stations. He has been a member of the House of Representatives for 10 years.
15 IP's

Dog Catcher (SPCA) 62 yrs old
He has been employed by the SPCA for 27 years. After retirement, at the age of 65, he plans to reside near the ocean in Right-On County.
10 IP's

Driver Ed. Teacher 35 yrs. old
A teacher at Not So Good High School for the past 13 yrs. A State Senator for the past 4 yrs.
20 IP's

Marina Owner 55 yrs. old
Owner of his own business for the past 25 yrs. Recently the waters in Rip-Off County have become increasingly polluted. As a result, his gross income has declined 5% during the past 5 yrs. He has been a member of the House of Representatives for the past 20 yrs.
25 IP's

Oil Refinery Manager 42 yrs. old
A resident of Rip-Off County since his company developed here in 1957. If the port is established his business would expand.
20 IP's

Representative from Superport, Inc.
25 yrs. old
A non-resident of Rip-Off County who is here to sell a bill of goods to the people of Outland. If the port is established he will receive a large promotion with a 25% pay increase.
No IP's

Chemical Plant Manager 50yrs. old
A 30 yr. resident of the state. With increased industry in the state, the cost of labor will probably increase. A member of the House of Representatives for 2 years.

25 IP's

Labor Leader 36 years old
A self-made man who spent his boyhood days in poverty. Has been a member of the state Senate for 4 yrs.

15 IP's

Unemployed worker 21 yrs. old
A resident of suburban Grassville for 21 yrs. He resides at home with his parents and 2 brothers. He enjoys surfing but recently sold his board to get money for a car payment.

5 IP's

Governor 54 yrs. old
A native of rural Rip-Off County. He has spent the past 30 yrs. in politics. The major concern of his office is to continue to maintain a stable financial situation or to increase revenue in Outland.

30 IP's

Hardware Store Owner 32 yrs. old
His business in lower Rip-Off County has been stable. His wife is the president of the Outland Citizens for Clean Air.

15 IP's

Auto Factory worker 35 yrs. old
Assembly line worker for the past 15 yrs. Three years ago, he was elected President of the Local UAW Conservation Organization. He spends much leisure time hunting and fishing.

15 IP's

Nylon Factory worker 25 yrs. old
She has worked at the local plant for the past 7 yrs. Two yrs. from now she plans to quit work after paying off a camper-trailer and boat.

15 IP's

Housewife 36 yrs. old
Mother of 5 children from the ages of 3 to 16. Her husband is employed by the State of Outland as Assistant Director of Natural Resources and Environmental Control. 15 IP's

Bar room Waitress 26 yrs. old
Recently divorced wife of a chemical engineer. She plans to work until she starts to benefit from her alimony payments. Mother of a 3-year-old daughter.

15 IP's

Superintendent of schools 47 yrs. old
Superintendent of Grassville School District for the past 5 yrs. Recently much pressure has been developing within the teachers' union for better materials and a better teacher-student ratio. To do this, a tax increase would be necessary.

30 IP's

Farmer 49 yrs. old
Lifetime resident of lower Rip-Off County. Recently he has been concerned about agricultural run-off in the Outland Bay. He has been State Senator for the past 10 yrs.

25 IP's

Snack Shop Operator 32 yrs. old
She has been operating a truck stop for the past 10 yrs. With the coming of a new interstate highway her business will probably drop off 50%.

15 IP's

Priest 35 yrs. old
From a family of 7 boys and 6 girls. He has been active in helping youth by counseling drug addicts. He is concerned with the high unemployment rate of many youths in Grassville.
15 IP's

Truckdriver 22 yrs. old
With the women's rights movement, she was able to get a job with a refinery in Mucous Hook. Her work involves local hauling.
10 IP's

Department Store Employee 19 yrs. old
She started working at the large store as part of a work-study program while a student at Grassville High School. She works as a dancer on weekends at Wild Time Beach.
10 IP's

Used Car Saleswoman 23 yrs. old
Saleswoman for one of the most corrupt car dealers in the Grassville area. Her presence has helped to increase buisness more than 10% in the past year.
10 IP's

Real Estate Saleswoman 40 yrs. old
Wife of the president of a local anti-pollution group. Most of her clients buy and sell in surburban Grassville.
15 IP's

Hunter 35 yrs. old
She spends a lot of her time in the lower two counties of Outland hunting. She works as a secretary at a refinery in Mucous Hook.
10 IP's

Banker 55 yrs. old
President of the Grassville National Bank for the past 10 yrs. Much of the bank's money capital is invested in a local chemical business located on the Plastic River.
25 IP's

Lawyer 30 yrs. old
A graduate of Outland University and the Pemple University Law School in nearby Murder City. His specialty is copporation law.
15 IP's

SPLIT COUNTY ROLES

Doctor 38 yrs. old
Resident of Somwheresville for 8 yrs. Father of 4 sons. His wife spends the summer at Wildtime Beach with her 4 sons.
25 IP's

Grocery Store Manager 28 yrs. old
A lifetime resident of Split County. A confirmed bachelor who takes a lot of pride in his automobiles. He races his cars at Little Ghostville Raceway in Right-On County every weekend.
20 IP's

Pharmacist 26 yrs. old
Resident of Somewheresville for the past 4 yrs. His new bride works as an advertising specialist for a local oil company. A member of the House of Representatives for the past 2 years.
20 IP's

Mayor of Somewheresville 33 yrs. old
Lifetime resident of the city. He was elected 2 yrs. ago on a platform of being a friend of the working man. He enjoys the outdoor life when time permits.
25 IP's

Gas Station Owner 48 yrs. old
Lifetime resident of Split County. Recently his profits have declined because of a gas shortage.
15 IP's

Dog Catcher (SPCA) 63 yrs. old
He has worked for the SPCA for 28 yrs. After retirement he plans to reside at Wildtime Beach. A member of the House of Representatives for 10 yrs.
10 IP's

Social Studies Teacher 36 yrs. old
A teacher at Poverty Beach Jr. High School for 14 yrs. A State Senator for the past 8 yrs.
20 IP's

Marina Owner 55 yrs. old
Owner of his own business for the past 20 yrs. His business success depends on the resort business in Outland Bay.
25 IP's

Oil Company Manager 40 yrs. old
A resident of Split County since 1956. A superport would expand his business. He has been a member of the State Senate for the past 4 yrs.
20 IP's

Representative from Superport, Inc.
28 yrs. old
A non-resident of Split County who is here to sell a bill of goods to the people of Outland. If the port is established he will receive a large promotion with a 25% pay increase.
No IP's

Food Processing Plant Manager 55 yrs. old
A resident of Outland for the past 35 yrs. With increased industry in the state, the cost of labor will probably increase.
25 IP's

Labor Leader 38 yrs. old
A self-made man who spent his boyhood days in poverty. His leadership in the construction union has been threatened recently because of the lack of jobs available. A member of the House of Representatives for the past 4 yrs.
15 IP's

Unemployed Worker 22 yrs. old
A resident of Somewheresville for 22 yrs. He lives at home with his parents and 2 brothers. He enjoys surfing, but recently sold his board to get money for a car payment.
5 IP's

Lt. Governor 50 yrs. old
A native of rural Split County. His main duty is to direct legislation in the State Senate.
30 IP's

Hardware Store Owner 33 yrs. old
His business has been declining recently because of the high rate of unemployment. His wife is an active member of a local Outdoor club. A member of the House of Representatives for the past 6 yrs.
15 IP's

Rubber Factory Worker 35 yrs. old
Assembly line worker for the past 15 yrs. Three yrs. ago she was elected president of the local union's conservation organization. She spends much leisure time fishing and hunting.
15 IP's

Nylon Factory Worker 26 yrs. old
She has worked at the local plant for the past 8 yrs. Two years from now she plans to quit work after paying off a camper-trailer and boat.
15 IP's

Housewife 37 yrs. old
Mother of 5 children from the ages of 3 to 16. Her husband is employed by the State of Outland Natural Resources and Environmental Countrol Division. A member of the State Senate for the past 4 yrs.

Bar Room Waitress 26 yrs. old
Mother of a 3-yr. old son. Upon finalizing her divorce papers, she plans to quit work and use her alimony for support.
15 IP's

Superintendent of Schools 48 yrs. old
Superintendent of Somewheresville School District for the past 10 yrs. The past 2 referendums to increase taxes for better salaries have been defeated.
30 IP's

Farmer 50 yrs. old
Lifetime resident of Split County. Recently he has been concerned about the increased efforts to industrialize many of the area farmlands.
25 IP's

Snack Shop Operator 35 yrs. old
She has been operating a truck stop for the past 8 yrs. A member of the House of Representatives for the past 4 yrs.
15 IP's

Rabbi 36 yrs. old
From a family of 6 boys and 7 girls. Spends a lot of time counseling youth with their hangups. He is concerned about the high unemployment of the youths in Somewheresville.
15 IP's

Truckdriver 23 yrs. old
She hauls fuel for a local oil company. Her weekends are spent at Wildtime Beach where she works as a model.
10 IP's

Department Store Employee 20 yrs. old
She started working at the large store as part of the work-study program while in high school. On the weekends she works as a dancer at a Wildtime Beach cocktail bar.
10 IP's

Motorcycle Saleswoman 24 yrs. old
She works at Somewheresville's most attractive motorcycle store. She has lived in Outland for the past 4 yrs. Her old man was the leader of the "Hell's Angels" before his accidental death.
5 IP's

Real Estate Saleswoman 40 yrs. old
Wife of the president of a local anti-pollution group. Most of her clients buy properties near the Outland Bay.
15 IP's

Hunter 38 yrs. old
She spends a lot of her time hunting in the wetlands near the Outland Bay. She works as a secretary with a local oil company in Somewheresville.
10 IP's

Banker 56 yrs. old
President of the Somewheresville National Bank for the past 11 yrs. Much of the bank's money capital is invested with the local oil industries.
25 IP's

Lawyer 32 yrs. old
A junior partner in one of the most respected law concerns in the state. Much of her leisure time is spent hunting and fishing. 25 IP's

RIGHT-ON COUNTY ROLES

Fisherman 45 yrs. old
Lifelong resident of Wildtime Beach
Father of 1 son and 1 daughter.
Business has been good but in his opinion his business will be doomed by superport. Also needs fuel for trawler.
20 IP's

Resort Hotel Owner 50 yrs. old
Lifetime resident of Right-On County.
Recently business has been slipping due to oil spills at lightering stations.
A member of the House of Representatives for the past 10 yrs.
25 IP's

Housewife 30 yrs. old
Resident of Right-On County for 7 yrs. Her husband works for a leading oil firm in Nowheresville. Does not participate actively in community affairs.
15 IP's

Mayor of Nowheresville 52 yrs. old
Lifetime resident of Nowheresville.
Married with 4 children. Been in office for 8 yrs. Very well liked and opposed to the superport.
25 IP's

Mayor of Wildtime Beach 49 yrs. old
Lifetime resident of Wildtime Beach.
Been in office for 4 yrs. Not well liked because of his budget planning.
25 IP's

Marina Owner 41 yrs. old
Lives along Follow Me River where is marina is located. Business has been declining because of polluted waters. Customers are moving boats to cleaner waters.
25 IP's

Cottage Owner 37 yrs. old
Winter home in Somewheresville (Split County). Summer cottage in Wildtime Beach.
15 IP's

Horseman 28 yrs. old
Resident of Right-On County for 3 yrs.
Owns stables on outskirts of Nowheresville. Increased population would make racing more popular in the area.
15 IP's

Doctor 37 yrs. old
Moved to Wildtime Beach from Grassville 7 yrs. ago. He finds the slow casual living very relaxing. A member of the House of Representatives for 2 years.
25 IP's

Restaurant Owner 40 yrs. old
Her business specializes in seafood and the summer tourist trade. She enjoys parties and wild times.
20 IP's

Pharmacist 34 yrs. old
Resident of Wildtime Beach for 16 yrs. He and his wife manage their own business.
A member of the State Senate for the past 4 yrs.
20 IP's

Gas Station Owner 34 yrs.old
Lifetime resident of Right-On County. With the limited supply of gasoline, her business declined last summer. A member of the State Senate for 8 yrs.
15 IP's

Representative from Superport, Inc.
28 yrs. old
A non-resident of Right-On County who is here to sell a bill of goods to the residents of Outland. If the port is established, he will receive a big promotion.
No IP's

Unemployed worker 21 yrs. old
A resident of Nowheresville for 21 yrs.
Her welfare check barely provides subsistence.
5 IP's

Hardware Store Owner 34 yrs. old
His business depends a lot on the summer business. His wife is very active in the conservation movement in the area. A member of the House of Representatives for 4 yrs.
15 IP's

Housewife 33 yrs. old
Mother of 4 children from the ages of 4 to 16. Her husband is employed by the Wildtime Beach Sanitation Dept.
15 IP's

Bar Room Waitress 28 yrs. old
Recently divorced and living with her 3-yr. old son at her parents' home. When her husband gets out of jail he will be required to pay her alimony.
15 IP's

Superintendent of Schools 50 yrs. old
Superintendent of Nowheresville School District for the past 10 yrs. The district needs more money in order to develop an expanded vocational education program.
30 IP's

Farmer 52 yrs. old
Lifetime resident of Right-On County. As a state senator, he is on a committee to study indsutrial growth in Outland.
25 IP's

Minister 45 yrs. old
Preacher at the Sunrise Service every Sunday during the summer months at Wildtime Beach. He has been very active in youth programs in the area.
15 IP's

Truckdriver 32 yrs. old
She drives a fuel truck for the local oil company. A member of the state House of Representatives for 4 yrs.
15 IP's

Dept. Store Employee 19 yrs. old
She started working at the store as part of a work-study program while in high school. She works as a part-time dancer at Wildtime Beach.
10 IP's

Used Car Saleswoman 40 yrs. old
Wife of the president of a local conservation group. Most of her clients are interested in resort rentals. A member of the House of Representatives for 6 yrs.
15 IP's

Real Estate Saleswoman 40 yrs. old
Wife of the president of a local conservation group. Most of her clients are interested in resort rentals. A member of the House of Representatives for 6 yrs.
15 IP's

Hunter 33 yrs. old
She spends a lot of her leisure time hunting in the wetlands of Southern Outland. Her husband works as a river boat operator in the Outland Bay.
10 IP's

Banker 55 yrs. old
President of Wildtime Beach State Bank for the past 14 yrs. Much of the bank's money capital is invested in local resort properties.
25 IP's

Lawyer 35 yrs. old
Employed by the Wildtime Beach City Council as a legal adviser. The summer months increase his income 20%
15 IP's

Teacher 30 yrs. old
A physical education teacher at Wildtime Beach High School. Her summer job involves directing the local recreation program.
20 IP's

Meat Processing Plant Manager 50 yrs. old
A lifetime resident of Right-On County. New industry would probably put new demands on management for wage increases.
25 IP's

Suggested Action Projects (You can earn 15 Influence Points per project)

1. Draw series of cartoons
2. Make a bulletin board
3. Make a model supertanker
4. Make a model superport
5. Make a scrapbook of newspapers and magazine accounts
6. Take a field trip
7. Take a series of slides
8. Conduct a survey
9. Write a poem
10. Interview authorities
11. Write a modern version of nursery rhymes
12. Make a map of coastal area showing natural resources.
13. Etc.

Position Papers (You can earn 15 Influence Points per paper)

Position papers require you to assemble data, organize information in logical form and formulate an opinion based on the role you are playing in Superport. Study the list and choose a topic and position. For example, you may want to impersonate a citizen owning a mosquito-infested wetland area and you're all for filling it in and putting some houses on it. Please add your own topic to the list if you wish.

1. Oil Spills
2. Supertankers
3. U.S. Dependence on Imported Oil
4. Fuel Shortage
5. Oil Refineries
6. Water Recreation
7. Marine Ecology
8. Dredging
9. Other sources of energy -- Nuclear Energy. Solar Energy, etc.
10. Wetlands
11. Heavy Industry and the Shore
12. Fishing
13. Beach Resorts
14. Etc.

A TEACHER PRESENTATION

The Effect of Crude Oil on the Marine Environment

The film loop, "The Forming of a Colloidal Suspension is helpful. *

I. Chemical Composition of Crude Oil

A. Describe crude oil as a mixture:

1. Alkanes (butane through dodecane)
2. Alkenes
3. Benzene derivatives
4. Extra by-products (sulfur, nitrates, etc.)

II. The Interaction of Crude Oil and Water

A. Demonstrate the forming of a colloidal suspension by mixing the oil with water.

B. Explain which of the parts of crude oil will:

1. Dissolve in water
2. Form a suspension with water
3. React with water to form new substances

III. The Effects of the Various Parts of Crude Oil on:

A. Plant life

1. The smothering effect on broad-leaved plants by a suspension.
2. The feeding effect of the nitrates and low molecular weight alkanes on microscopic plant life (algae, etc.)
3. The poison effect of the acids formed by the reaction of crude oil by-products with water.

B. Animal life (aquatic)

1. Obvious smothering effect of suspensions
2. Subtle changes in chemical balance of fish and crustacea (as well as mollusks)
3. Dangerous increase in the contamination of edible shellfish
4. The feeding effect on microscopic animals (similar to effect on small plants)

C. Humans

1. Show potential skin cancer possibilities (Werner Exp.) of alkanes and benzene on human skin.

2. Effect of increased acidity on eyes, ears, and internal organs

* Available from Ealing Film Loops, Cambridge, Mass. 02140

BASIC OUTLINE OF POINTS TO BE COVERED

The game will deal with economic, social, environmental and international implications of a superport and its related industries.

I. Economic Implications

Advantages of Superport

A. More tax dollars
B. More jobs created

Disadvantages of Superport

A. Creates a need for more schools.
B. Creates a need for more roads
C. Creates a need for more government services.

II. Social Implications

A. Could change the area from a rural to an urban area, possibly creating frustration for the native inhabitants.

B. Could bring more cultural and other activities to the area

III. Environmental Implications

Potential pollution could affect the marine ecology and many of man's recreational activities.

IV. International Implications

A. Could affect trade relations with other nations, i.e., importing more oil may lead to greater balance of trade, balance of payments, etc.

B. Oil and diplomacy - Western Europe, Japan, and the U.S. rely more heavily on oil from the Mid-East, a situation that would affect relations with the Arab States, which is a factor in U.S.-U.S.S.R. relations.

C. Trade becoming more important factor in U.S. Foreign Policy development

A SUPERPORT ACTIVITY

I. The New Breed

As mentioned 50% of the world oil production is transported across the oceans. What type of special ship is needed in the transportation of such a vital resource?

A little over a century ago in 1861, the first full cargo of oil was transported on a sailing brig from Philadelphia to London. This ship could hardly be called a"tanker" but it did start what is now a major portion of all international shipping. Today there are nearly 4,000 tankers of various sizes travelling the major shipping routes. They range in size from less than 6,000 dead weight tons (DWT refers to the tons of cargo a ship is capable of carrying) to over 50,000 DWT.

Twenty years ago, a tanker of 30,000 DWT was considered large. Today, on the other hand, super tankers of the 500,000 DWT class are not uncommon. There are proposed ships on the drawing boards which will have a capacity of 1,000,000 DWT.

Under the present construction prices it would take about $20 million to construct a tanker of the 50,000 DWT class, and a supertanker of the 400,000 DWT class is estimated to cost $71 million. Obviously, the larger the ship becomes, the more expensive it is to construct. With the costs so high, why build the supertanker?

A. DWT vs. Costs

Below is a table showing dead weight tonnage and estimated total cost of the construction of the ship. Calculate the cost per DWT for each ship and fill in the table with your answers.

Scale for estimating tanker construction costs in the U.S. (1971)

Dead Weight Tonnage	Cost per DWT	Estimated Total Cost
50,000		$20,450,000
100,000		31,000,000
200,000		46,200,000
300,000		59,700,000
400,000		71,200,000

1. Why is cost per DWT significant?

2. Make a graph of DWT vs. cost per DWT. Put the tonnage (DWT) on the horizontal axis.

3. What happens to the cost per DWT as the size of the tanker increases?

4. What effect will this have on the shipping costs of oil and the final cost to the consumer ?

B. DWT vs. Numbers

Using the same table as shown in investigation I.A., answer the following questions:

1. Assume you are the head of an oil firm and your oil must be transported from the oil fields in the Middle East to a refinery in New Jersey. You have tankers of the 50,000 DWT class only. How many ships do you need to transport a cargo of 400,000 tons?

2. Assume they all load and leave at approximately the same time. How many ships have you entered into the world shipping lanes?

3. How could you decrease the number of ships you have entered into trade and still transport the same amount of oil?

4. What effect will this have on the potential for collisions to occur between tankers and other ships?

C. Numbers vs. Docks

When goods are transported by sea, the ship obviously must dock somewhere to unload the cargo. Most of the major ports in the U.S. today can handle ships having up to 40 foot drafts. The draft of a ship is the amount of the ship that is actually underwater when it is loaded. Consider the modern supertankers. A 300,000 DWT tanker draws 75 feet while a 500,000 DWT tanker could have a draft of nearly 100 feet.

1. Look at Figure 1. What will have to be done before supertankers can use such ports as Wilmington and Philadelphia?

2. What effect will this have on the natural environment of these areas?

3. Assuming that you want to prevent any further damage to the natural environment, what other alternatives are there for docking these ships?

If indeed we cannot get the ship to the port then we must take the port to to ship. This is done by off-shore docks constructed where the water is sufficiently deep.

4. What effect will this have on the congestion of the present ports?

5. From your answers for section I.A., B., and C., what are the three main reasons for building the supertanker?

6. There is yet another reason for developing the supertanker. Look at Figure 2 and determine what it is.

Extra credit: The pros and cons of an off-shore oil dock in the Delaware Bay. (6)

D. The Long Ships

The new breed of tanker, the supertanker, is extremely large. How does the supertanker compare in length with areas you are familiar with? Use the data given in Table 1 to answer the questions.

Table 1 Data on selected supertankers

Tonnage	Length
16,419	523
117,000	974
477,000	1243
500,000	1260
1,000,000	1600

Compiles from: Coan, E. 1971, Oil Pollution, Sierra Club Bulletin 56(3),12-16

1. Using the graph paper, draw the lengths of the tankers listed to scale. Label each line as the tanker it represents. (It may be desirable to cut the graph paper lengthwise and then tape these halves end to end.)

2. Remembering that there are 5280 feet in a mile, calculate what fraction of a mile each of the ships represent. Are any of the ships longer than a quarter of a mile?

3. Walking at 4 mph, how long would it take you to walk the total length of the 1600 foot supertanker.

Extra credit: Make any other meaningful comparisons to show the length of these tankers. (For example, compare to the Empire State Building, city blocks or locations near your home.)

II. What Causes an Oil Spill?

Dr. Blumer has estimated that 0.1 percent of the total oil production of the world will end up as an oil spill. What are the causes of an oil spill?

List at least four different causes of oil pollution. Use any resources available at home or in the library.

III. Oil on the Move

When an oil spill occurs it would be very nice if it would simply lie there patiently waiting to be cleaned up. This, however, is not the case. An oil spill that starts out as a small slick on the ocean (or bay, harbor, or river) soon becomes a large slick capable of causing mass pollution. In the first hour or two the spreading is the greatest. After this, there is only minimal growth in the size of the spill.

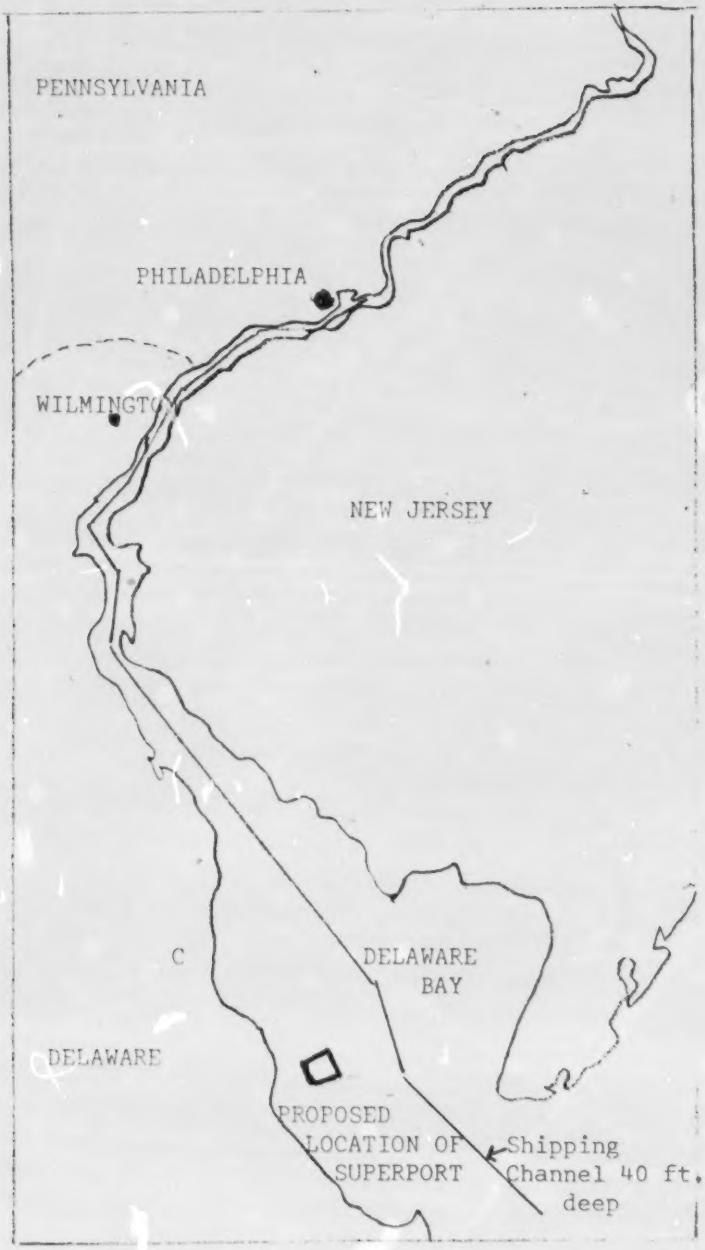


Figure 1: Delaware Bay Shipping Canal

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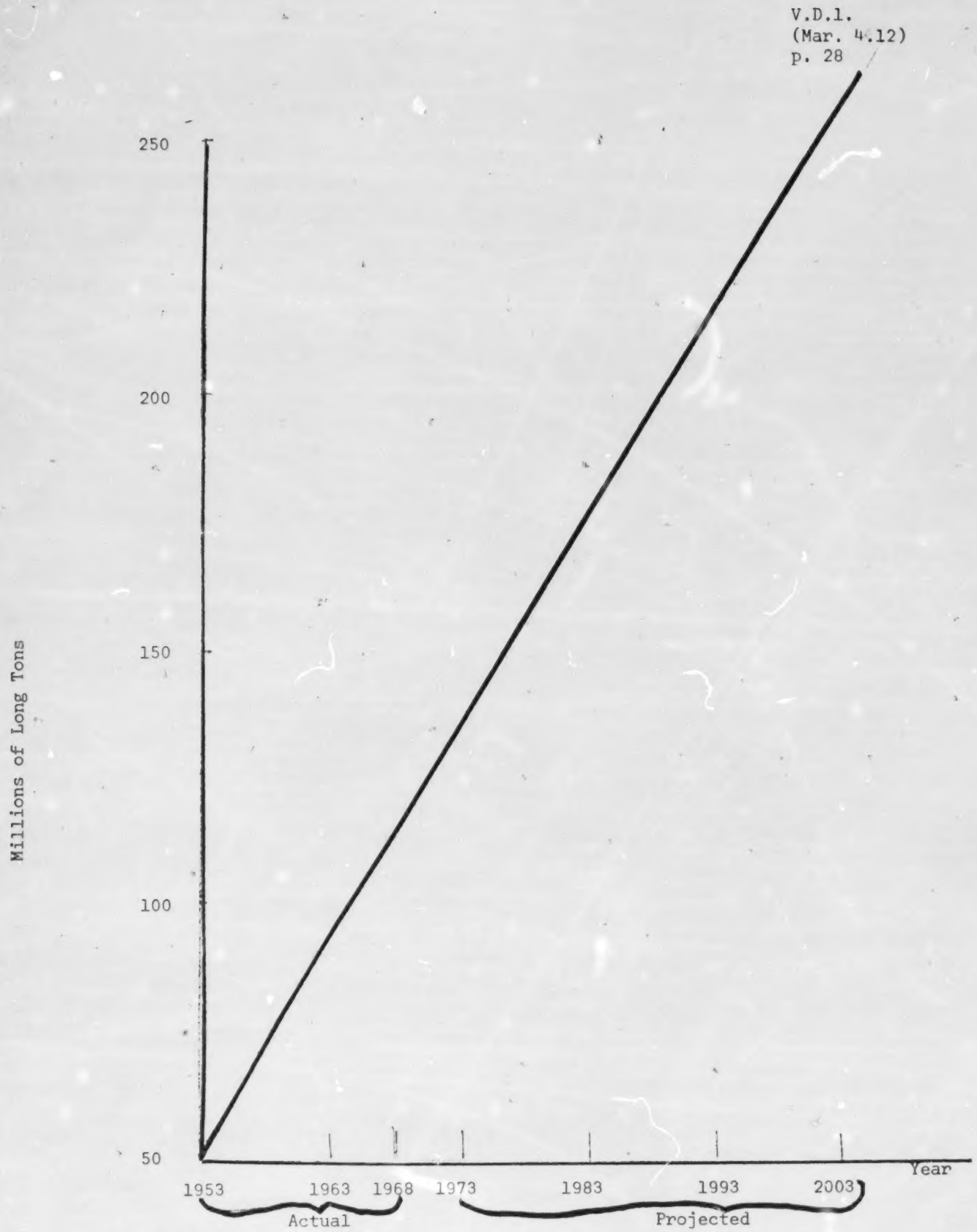
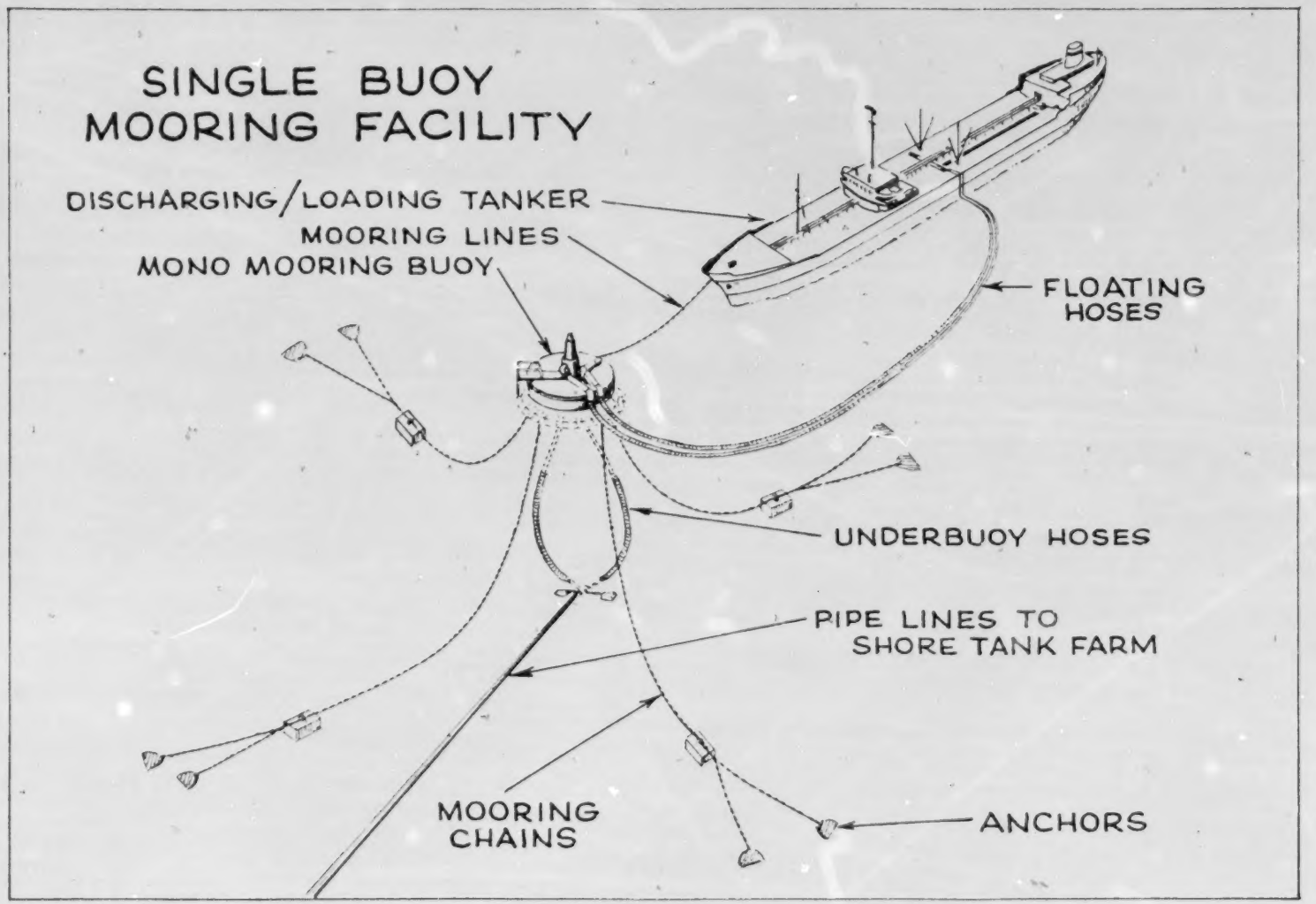
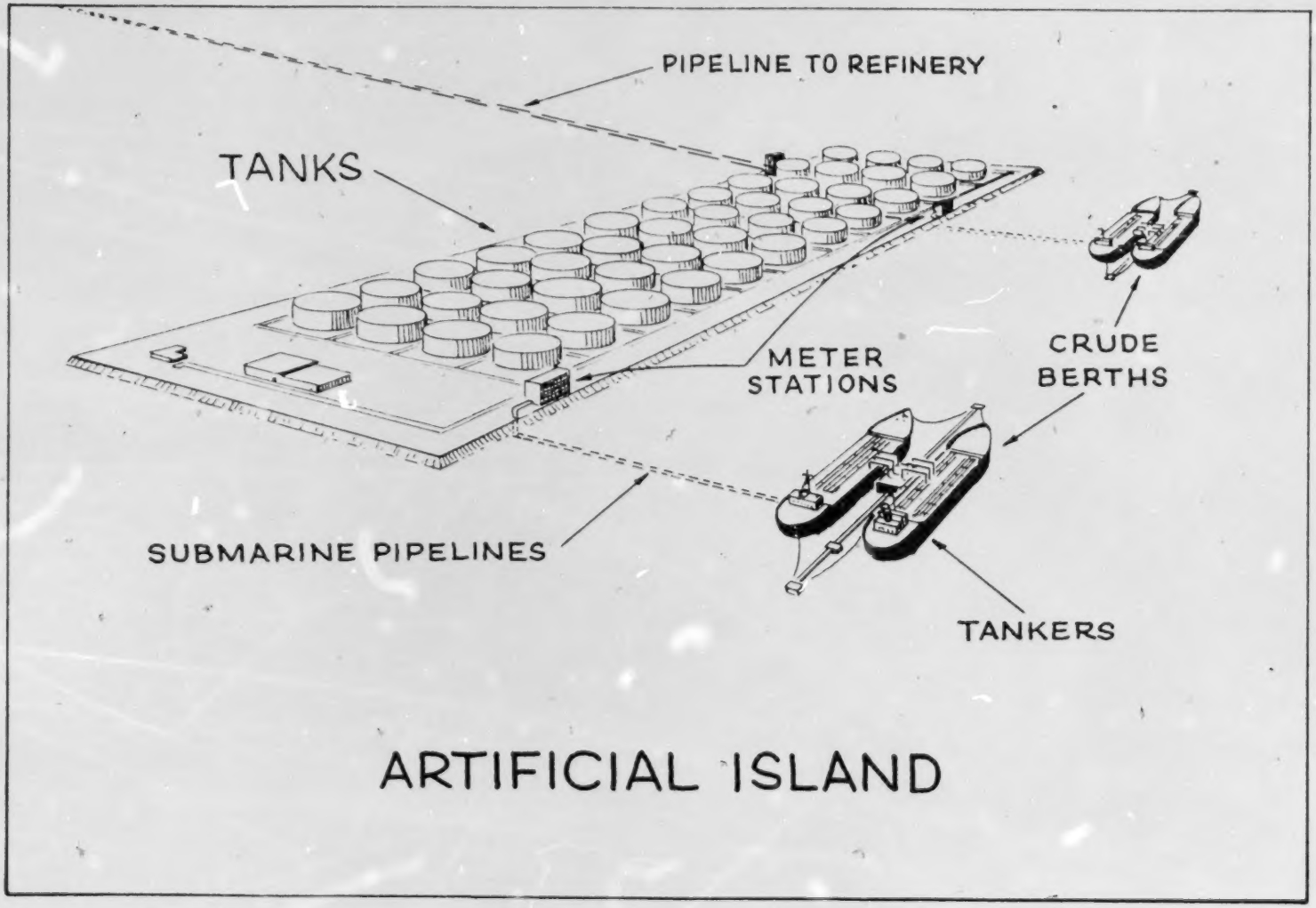
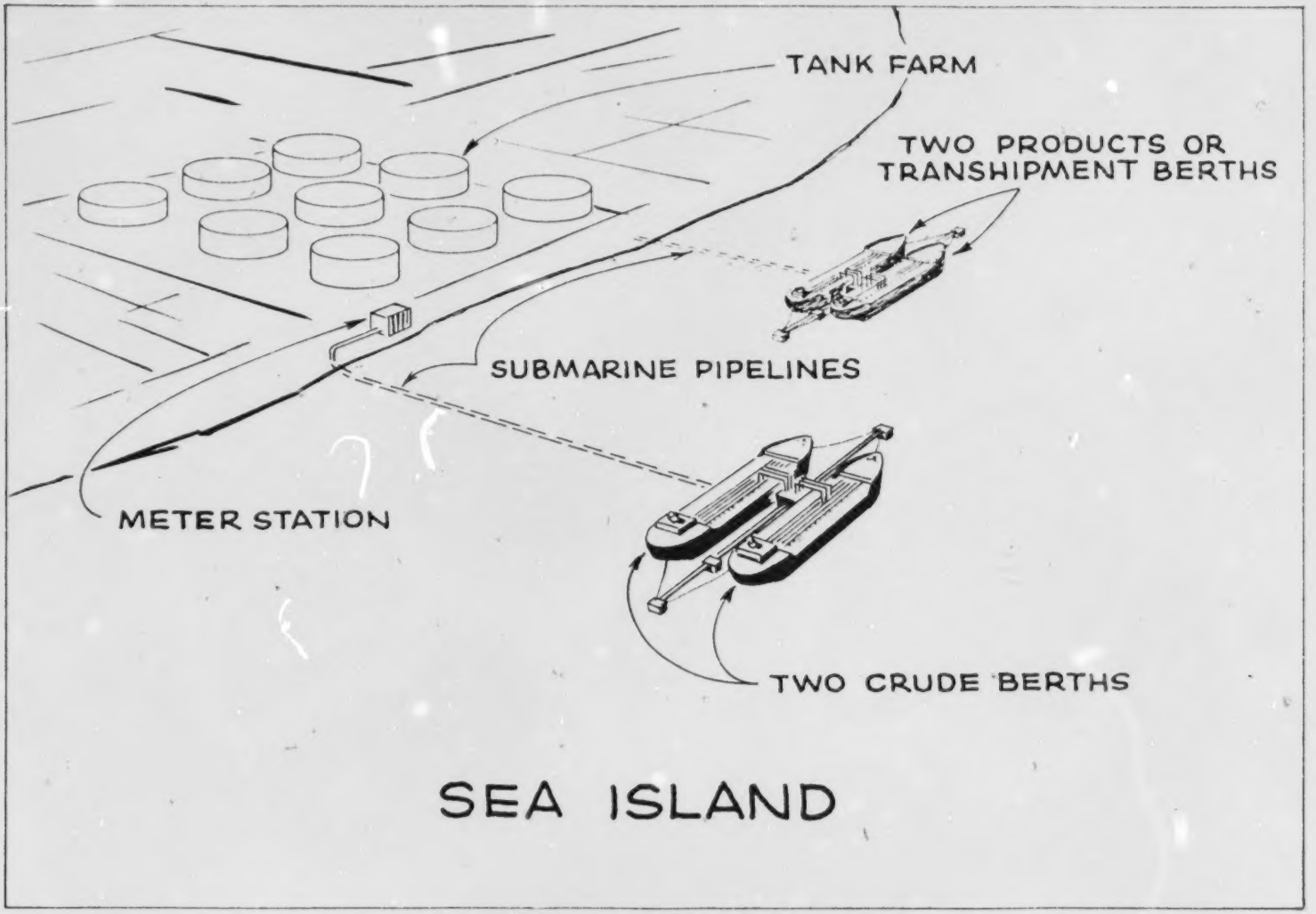


Figure 2: Projected East Coast Oil Imports


SINGLE BUOY
MOORING FACILITY
DISCHARGING/LOADING TANKER
MOORING LINES
MONO MOORING BUOY
FLOATING HOSES
UNDERBUOY HOSES
PIPE LINES TO SHORE TANK FARM
MOORING CHAINS
ANCHORS



ARTIFICIAL ISLAND



SEA ISLAND

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FILM - CRISIS IN THE ESTUARY

1. Define estuary.

2. What are three components of the estuary?

3. What is the main function of an estuary to an environment?

4. List four factors that affect life in the estuary.

5. List four actions man has taken which may cause damage to the estuary.

Possible sources for obtaining the film are Delaware Nature Education Center, University of Delaware Instructional Resources Center, and The State Department of Public Instruction in Dover.

FILMSTRIP - MAN'S NATURAL ENVIRONMENT *

CRISIS THROUGH ABUSE - PART I

1. What kinds of pollutants are being poured into Lake Erie and by whom?

2. According to Dr. Commoner, how are city sewage plants helping to strangle Lake Erie?

3. How are farmers inadvertently polluting Lake Erie and what are the results of their pollution?

4. What caused the oil disaster of 1969 off the coast of Santa Barbara in California?

5. What were the consequences of this disaster for bird and marine life and for the shoreline?

6. What two incidents wake up the world to the problems of air pollution?

7. How many tons of pollutants are poured into the atmosphere every day and by whom?

8. What makes up invisible and visible forms of air pollution?

9. What kinds of things are affected by air pollution? How?

10. Why can noise also be considered a form of pollution?

11. What will the construction of a jetport north of the Everglades National Park do to the welfare of the park?

* available at Concord High School's Social Studies Resource Center or at Guidance Associates, Pleasantville, New York.

References

1. Coan, E. 1971. "Oil Pollution,"Sierra Club Bulletin, 56, 3, 12-16.

2. The Forming of a Colloidal Suspension, Ealing Film Loops, Cambridge, Mass. 02140.

3. Crisis in the Estuary, a film. (See page 32).

4. Man's Natural Environment, a film available at Concord High School's Social Studies Resource Center or at Guidance Associates, Pleasantville,

5. U. S. Deep-Water Port Study, Institute of Water Resources, U. S. Army Corps of Engineers.